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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,681	01/04/2004	Chin-Fa Tu	AOIP0012USA	1680
27765	7590	08/10/2006	EXAMINER	
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			KAYRISH, MATTHEW	
			ART UNIT	PAPER NUMBER
			2627	

DATE MAILED: 08/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/707,681	Applicant(s) TU, CHIN-FA	
	Examiner Matthew G. Kayrish	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4-7, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Hekizono (US Patent Number 7073183).

Regarding claim 1, Hekizono discloses:

An optical disc drive comprising:

A housing having two tracks (column 1, lines 27-39, tray is guided along tracks);

A tray installed inside the housing (column 1, lines 28-30) along the two tracks (column 1, lines 27-39, tray is guided along tracks);

A solenoid (figure 2, item 11) fixed on the tray (column 1, lines 66-67) for providing magnetic force (column 2, lines 13 & 14);

A latch (figure 2, item 11a) installed beside the solenoid (11a is beside 11) for moving according to changes of the magnetic force (column 2, lines 13 & 14);

A push rod (figure 2, item 12) fixed on the tray (column 1, lines 56-60) with one end connected to the latch (column 1, line 65);

An elastic device (figure 2, items 1, 15 and the hole on item 12) installed on the tray for elastically moving the push rod (column 1, lines 60-64);

A positioning shaft fixed on the housing (column 1, line 43); and

A hook (figure 2, item 6) having a first end fixed on the tray (figure 2, fixed by item 24), a second end positioned next to the push rod (figure 1, place where item 12a contacts item 6), and the third end for engaging with the positioning shaft (figure 2, item 6b).

Regarding claim 2, Hekizono discloses:

The optical disc drive of claim 1 wherein the solenoid comprises a magnet (column 2, line 1) and a coil (figure 2, solenoid has a coil) and the solenoid is capable of attracting the latch (column 1, line 67 & column 2, line 1) and the latch is capable of linking (column 3, lines 16-20) with the push rod being pushed forward to the elastic device when the coil is not supplied with power (column 9, lines 23-26);

The coil is capable of generating the magnetic force to counteract the magnetic force of the magnet and the elastic device is capable of moving the push rod forward when the coil is supplied with power (column 9, lines 16-23).

Regarding claim 4, Hekizono discloses:

The optical disc drive of claim 1 further comprising an extension spring installed on the tray for elastically moving the tray (figure 7, item 8).

Regarding claim 5, Hekizono discloses:

The optical disc drive of claim 1 wherein the elastic device comprises an external sliding part (figure 2, item 1) installed on the tray in a sliding manner (figure 2, items 1 and 4 are slidably attached), an internal sliding part (figure 2, hole of item 12) being disposed within the external sliding part (item 12 is within item 1).

Regarding claim 6, Hekizono discloses:

The optical disc drive of claim 5 wherein the elastic device further comprises an elastomer connecting the external sliding part and the internal sliding part (figure 2, item 15).

Regarding claim 7, Hekizono discloses:

The optical disc drive of claim 6 wherein the elastomer is a compression spring (figure 2, item 15 is a compression spring).

Regarding claim 10, Hekizono discloses:

The optical disc drive of claim 1 wherein the first end of the hook has an edge (figure 2, side near rotational shaft [24]), the second end of the hook has an edge touching the push rod (figure 1, contact at item 12a), and the third end of the hook has a tongue-shaped extension part (figure 2, item 6b).

Regarding claim 11, Hekizono discloses:

The optical disc drive of claim 1 wherein the hook is used for locking the positioning shaft to fix the tray (figure 1, item 6b locks item 5).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hekizono, in view of Ahn (US Publication Number 2004/0004927).

Regarding claim 3, Hekizono fails to disclose:

An optical disc drive comprising a locking hook, further comprising a torsion spring installed on the hook for providing a twisting force to the hook to return the hook to its original position when the hook is moved by a small angle.

Ahn discloses:

An optical disc drive comprising a locking hook, further comprising a torsion spring installed on the hook (figure 5, item 330) for providing a twisting force to the hook to return the hook to its original position when the hook is moved by a small angle (figure 4, item 330 will force item 323 to contact 310 when locked).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the biasing spring [7] of Hekizono with a torsion spring, as taught by Ahn, because both methods are recognized equivalents in the art. The addition of a torsion spring will save room on the base of the tray where the locking mechanism is placed. It would also provide with a constant force to be pulling the locking lever to lock on the locking pin. Therefore, using this recognized equivalent is well known to bias the locking hook in the locked position.

Regarding claim 8, Hekizono fails to disclose:

An optical disc drive with an elastic device mounted to the tray for moving a push rod of a locking mechanism, wherein the elastic device comprises an external sliding part, an internal sliding part, and an elasomer, wherein the external sliding part comprises

a protrusion for contacting an extended part of the track to prevent the external sliding part from moving excessively when the push rod is pushed against the elastic device.

Ahn discloses:

An optical disc drive with an elastic device mounted to the tray for moving a push rod of a locking mechanism, wherein the elastic device comprises an external sliding part, an internal sliding part, and an elasomer, wherein the external sliding part comprises a protrusion (figure 8, item 310) for contacting an extended part of the track (figure 9, item 325 extends into track) to prevent the external sliding part from moving excessively when the push rod is pushed against the elastic device (page 3, paragraph 40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place a protrusion on the external sliding part to prevent the external part from moving excessively, as taught by Ahn, because when the tray is slidably attached to the external sliding part, a protrusion would be needed to catch the tray from excessive motion, therefore, limiting the motion of the tray before it becomes too excessive. If there is not a protrusion to limit the motion of the sliding tray, the tray and the external sliding part could become unattached. The protrusion is designed to contact a part of the tray to keep the tray from expelling too far out of the housing to the point where it is prevented from falling out. Therefore, as a means of reliability, the protrusion is part of the external sliding part to prevent the tray from falling out of the housing.

Regarding claim 12, Hekizono fails to disclose:

An optical disc drive with a locking mechanism comprising a push rod, wherein the push rod is an L-shaped push rod installed on the tray in a rotatable manner, and the push rod includes a protruding shaft connecting to a hole of the latch.

Ahn discloses:

An optical disc drive with a locking mechanism comprising a push rod, wherein the push rod is an L-shaped push rod (figure 5, item 310 is L-shaped) installed on the tray in a rotatable manner (figure 5, rotatable about shaft 221), and the push rod includes a protruding shaft connecting to a hole of the latch (figure 5, item 340 has a shaft that will connect to the hole in item 360).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to create a push rod to be L-shaped, as taught by Ahn, because L-shaped rods, as used by Ahn, can be extremely versatile when pivoted about the right axis. In this case, the top of the "L" is used to connect to the elastomer, while the bottom of the "L" rotates about an axis through the center of the base. This will allow for two contact points at each corner of the base of the "L", depending on the direction of rotation.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hekizono, in view of Chen (US Publication Number 2004/0221300).

Regarding claim 9, Hekizono fails to disclose:

An optical disc drive with a locking mechanism, with a hook for hooking a positioning shaft, wherein the positioning shaft is riveted to the housing.

Chen discloses:

An optical disc drive with a locking mechanism, with a hook for hooking a positioning shaft, wherein the positioning shaft is riveted to the housing (page 1, paragraph 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to rivet the positioning shaft to the housing of the tray, as taught by Chen, because rivets can absorb large amounts of impact and shock without breakage or failure of the locking member (Abstract of Chen).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew G. Kayrish whose telephone number is 571-272-4220. The examiner can normally be reached on 8am - 5pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 571-272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or

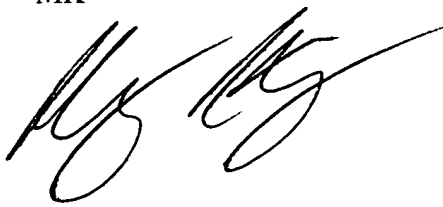
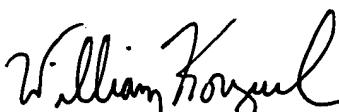
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access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or
571-272-1000.

Matthew G. Kayrish

8/1/2006

MK


8/1/2006
WILLIAM KORZUCH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600